

THE
SOUTHERN AGRICULTURIST.

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PART I.

ORIGINAL CORRESPONDENCE.

ART. I.—*An Essay on the Culture of the Grape Vine, and the making of Wine; suited for the United States, and more particularly for the Southern States.* By N. HERBEMONT, of Columbia, S. C.

“And Noah began to be an husbandman, and he planted a vineyard.”—
GENESIS C. IX. V. 20

(Continued from page 17.)

On the preparation of the Land, and the Planting of the Vines.

IN this, as in every thing else, the precepts given by the most experienced writers, are much better than the practices most generally followed. We must keep in mind, that our most profitable methods are always those, in which no pains and reasonable expense are spared, but are bestowed with judgment, and that the pains taken at the beginning, most generally insure success, when even slight neglect may cause the attempts to fail, in which case, all that has been expended is lost.

Some persons, as if intent on finding out how far they can go in deficiencies, seem determined to ascertain how little work is necessary, that the Vine may barely live. Such injudicious persons plant according to a manner, which shows that the Vine can bear a great deal of ill usage. Some of them plant the vine cuttings by driving with a mallet, an iron pin or dibble, sufficiently long for the purpose, and then insert the cutting in the hole thus made, press it a

little all round with the foot or the end of a stick, and then let it take its chance. We suppose the ground had been previously prepared by ploughing. It is very evident, that by making a hole in this manner, the earth is made very hard, in the very place where it ought to be loose and friable, and that the very young and tender roots of the vine, cannot, without the utmost difficulty, pierce through the crust thus made all round the cutting. Others adopt a better way, which is, of making a hole with a spade, of the width of it, and fifteen or eighteen inches long, and about as deep; then laying the cutting somewhat obliquely in it, fill the hole with the earth taken out of it, leaving two or three buds out of the ground. When this method is carefully pursued, the vines will do tolerably well, if the following season is very favourable. A better way, is to make the holes much larger, and deeper; and, what is better still, is to dig trenches about two feet wide and two feet deep, at the distance intended for the vines; fill the bottom with the surface earth or vegetable mould, mixed with the trash that may happen to be with it, such as grass, weeds, corn stalks, &c. covering this with purer mould, and in this, carefully plant the cuttings somewhat obliquely, and leaving *only one bud out of the ground*, pressing the earth gently with the foot, so that it be in contact with the cutting in every part of it, except that which is left out above the surface of the ground. This method will generally be attended with success, and if the season is favourable, very few of the cuttings will fail taking root and doing well. The culture of the Vine, however, is an object of so much importance, and the Vine when well planted and properly cultivated, is of so long a duration, and is so productive, that one ought not to be reluctant in bestowing upon it that preparation best calculated to ensure its fullest success, and to give it the greatest vigour it is capable of, consistently with the object in view—the making it produce a great abundance of rich fruit. Although I disapprove of the use of manures, particularly from the stable, in the common course of cultivation required by the Vine, because it is very apt to injure the quality of the wine; yet, for the sake of securing a vigorous growth to vine cuttings, I would recommend, with the best writers and practical men on this subject, to prepare the soil by very high manuring for two or three years previously to the planting of the vines, cultivating it in Indian corn, or, which is

better, in potatoes of either kind ; and the summer or fall previously to planting, cover the land with leaves, weeds, and other vegetable matter, in a decomposing state ; then turn the earth upside down, to the depth of two or three feet, or even more if practicable. Care must be taken in doing this, that the whole be well mixed, and that the least rotten vegetable matter be rather at the bottom than near the top. If the ground is stony, the work may be done in such a manner that the stones will form the lowest part. This will serve as an under-drain, if the soil require it, and if not, the stones will not prevent the roots from passing through in search of moisture, should it be necessary for them to go so deep for it. In performing this labour, the stones that may be too large to be left in the ground, may be removed.

This is a very expensive and laborious operation ; but it is asserted, that its advantages fully compensate the expense and labour. Monsieur Bose, one of the authors of the "*Neuveau cours complete d'Agriculture*," Member of the Institute, and Inspector of the Royal Nurseries, and of those of the French Government, says :—"It is unfortunate for Agriculture, that the expenses of this operation, when it is done with the spade, hoe or mattock, are so considerable, for its advantages are very great, very soon obtained, and very durable. In fact, by it, the earth is rendered more permeable to the roots of plants, to the principles of the air, the rain, and even the heat of the sun, that is to say, to the four conditions necessary for all rich vegetation ; generally a depth of two feet is sufficient. There are, however, vegetable gardens, orchards, &c. where they go as far as three or four feet. In a light soil, the trenching with the spade sufficiently fulfils its object, because the throwing of the earth to some distance, is sufficient to divide and crumble it ; but in a soil containing many stones, the mattock is necessary, and this is an instrument that does a great deal of work, but it must be followed by the spade or shovel.

' Whichever of these modes are adopted, you must always require of the workmen, that they leave a space of at least three feet between the part that is done, and that which is not ; that is to say, between the part where they work, and that where they throw the earth ; and watch that they break it fine, mix it well, and take away all the large stones."

I shall also quote an article, on the subject of trenching, as preparatory for making a garden, taken from *Cobbett's American Gardener*; chap. i. sec. 20.

‘——— This is as much as I shall probably be able to persuade any body to do in the way of preparing the ground. But this is not all that ought to be done; and it is proper to give directions for the best way of doing this and every thing else. The best way is, then, to trench the ground, which is performed in this manner. At one end of the piece of ground, intended for the garden, you make, with a spade, a trench all along, two feet wide and two feet deep. You throw the earth out on the side, away from the garden, that is to be. You shovel out the bottom clean, and make the sides of the trench as nearly perpendicular as possible. Thus you have a clear open trench, running all along one end of your garden-ground. You will then take another piece, all along, two feet wide, and put the earth that this new piece contains, into the trench, taking off the top of the new, two feet wide, and turning that top into the bottom of the trench, and then taking the remainder of the earth of the new two feet, and placing it on the top of the earth just turned into the bottom of the trench. Thus, when you have again shovelled out the bottom, and put it on the top of the hole that you have put into the trench, you have another clean trench two feet wide and two feet deep. You thus proceed, till the whole of your garden-ground be trenched, and then it will have been *cleanly turned over, to the depth of two feet.*

‘As to the expense of this preparatory operation, a man that knows how to use a spade, will trench four rods in a day very easily; [this must be understood of old ground, free from stumps and roots,] in the month of October, or in the month of November, if the ground be not frozen. Supposing the garden to contain an acre, and the labourer to earn a dollar a day, the cost of this operation will, of course, be forty dollars; which, perhaps, would be twenty dollars above the expense of the various ploughings and harrowings, necessary in the other way; but the difference in the value of the two operations is beyond all calculation. There is no point of greater importance than this. Poor ground deeply moved, is preferable, in many cases, to rich ground with shallow tillage; and when the ground has been deeply moved once, it feels the benefit for ever after-

‘A garden is made to last for ages; what then, in such a case, is the amount of twenty dollars. It is well known to all who have experience on the subject, that of plants of almost any kind, that stand for the space of three months, in top soil of the same quality, one being on ground deeply moved, and the other on ground moved no deeper than is usual, the former will exceed the latter one-half in bulk. And as to trees of all descriptions, from the pear tree down to the currant bush, the difference is so great that there is room for no comparison,” &c.

These quotations, suffice to show the opinions of practical and scientific men, on the subject of preparing the land by trenching; and although it is not expected that many will be at the trouble and expense of doing that which is the very best, it is hoped, that the greater number of those who may attempt the cultivation of the Vine, will go as near to it as may be practicable and convenient to them; remembering, that expense incurred in this manner, is like seed sown in a well prepared soil—it produces hundred fold. Any mode, therefore, of preparing the ground for a Vineyard, which will approximate to that here recommended, will be proportionally beneficial, as it comes nearest to it. This operation ought to be finished at least a few months before the time of planting, if possible; and the planting in this case, is best done in the fall of the year; for, during the winter, the earth will settle fully, and closely embrace the plants, which will secure their resisting the heat and drought of the spring and summer. The planting may be deferred however, if necessary, without much danger, until the spring, when the ground has been well prepared.

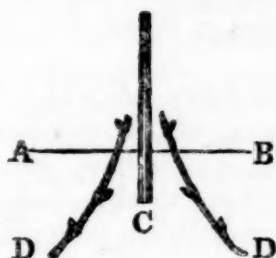
This expense may deter some persons from the attempt; but for their encouragement, I will state, that tolerable success may be obtained, sometimes, with much less. I beg, however, they will consider, that the value of the land is thereby increased more than one hundred times its former value, and, that if such expenses are incurred in Europe, where the first cost of the land is very considerable, our advantage is very great considering that that ours costs so small a price, as not to be deserving of any notice, for a purpose of this kind. Vineyards, in full bearing, are of immense value, and do sometimes sell in France as high as one thousand, three, four, or even six thousand dollars per acre. Land is so cheap and abundant here, that it will

probably never sell at such prices, though some of it may be worth it; for it is not true, that "the value of a thing is the price it will fetch." If an acre of Vineyard yield sometimes upwards of two thousand gallons of wine, at one crop, as is the fact in some instances; no matter how small the price of such wine may be, the Vineyard cannot sell, in this country particularly, for what it is worth. Supposing the expense of culture be forty dollars, and the wine sells at fifty cents per gallon, the real profit on such an acre will be \$960. Say that this is even double the average crop of such a fertile Vineyard, the average of the price would then be \$480 per annum, the principal of which is near \$7000. I am fully satisfied, that on our poor sand-hill land, with only tolerable management of culture, we may calculate on an average crop of three hundred gallons, when the vines are in full bearing, or when eight or ten years old. Estimate the price of this wine as you please, it will make the value of the land more than it will probably ever sell for. Lands that can now be had in any quantity, at from twenty-five cents to five dollars per acre, can never be expected to sell for three or four thousand dollars, though it is worth it or more by its products.

At what distance Vines ought to be planted, is not easy to determine. This depends on the mode of cultivation and training adopted. I have seen it in the north and middle of France, at about three feet each way, and sometimes as near as two feet. Such close planting will not do in this country, particularly with the kind of grape cultivated here with success. The distance I have finally adopted for myself, after many experiments, is ten feet by seven feet, and yet I am satisfied, that, after a few years, I shall find them too close, and be obliged to root up a part of them, which will be, of course, the least promising.

The land then, being prepared according to the best manner convenient to the owner, lay off the ground, by drawing lines from one end of it to the other, at the proper distance from each other, and the other lines across the first, and at right angles with them. We suppose the first are ten feet, the others seven feet. It is recommended that the greatest distance between the lines run from east to west if convenient. The intersections of these lines will mark the place of each vine, according to the distance of my choice. It is adviseable to drive a small stake at each in-

tersection, and plant close to it a cutting, or, which is much better, two cuttings, one on each side of the stake, taking care to plant them somewhat obliquely, and diverging from each other thus :—



The line A B represents the surface of the ground ; C the stake, and D D the cuttings, the tops of which are near each other, having the stake between them, and their lower ends farther apart, that, if both grow, one of them may be taken up without disturbing the other.

Those taken up, may be planted in the missing places, or in extension of the Vineyard. The stake may be four, five, or six feet above the ground, and driven to a sufficient depth, that it may stand firm. The cuttings ought to have only one bud above the ground, and this bud ought to be a very sound one. They ought to be at least, one foot deep in the ground. If they are short, place them nearly perpendicular, and if long, give them a curve, that the lower end may lie nearly horizontally at the bottom of the hole, at least one foot or eighteen inches deep. Many authors recommend to leave two or three buds out of the ground ; but, reasons, which I think fully sufficient, induce me to prefer only one. They are principally these : It is desirable to train the cuttings with one shoot, and each bud gives at least one of them. By having a considerable part of the cutting above the ground, it is exposed to the heat and drying winds, to which we are much subject in this country, by which the cuttings suffer much, at the time they require all the moisture they can get, to enable them to push roots. If the upper bud should fail, the next one below will probably grow. Indeed the second bud which is below the surface of the ground, will frequently push, although the upper one has done so. In this case I would suffer both to remain, and, as the lowest one is generally the best, the upper one, if the weakest, is to be suppressed at the next pruning.

To make a cutting put out roots and branches so as to form a perfect plant, is a considerable effort of nature ; and, to succeed well, every thing ought to be as favourably ordered as possible. Every thing detrimental must be kept

away, particularly in the beginning, such as a hot burning sun, drying or cold winds, and, in general, every thing that seems to affect vegetation unfavourably. Cuttings, therefore, ought to be left as little exposed to these, as may be practicable. Having the cutting all in the ground except one bud, must in a great degree prevent a failure by these causes.

In the cultivation of the Vine, as in every thing else, the cultivator ought to keep in mind, during all his operations, the object he aims at. In this case, it is to have strong, healthy, and vigorous vines, that will bear an abundance of fruit. It is all important, therefore, to establish your plants with long and deep roots, so that they may resist the great drought to which they will be exposed. In order to form strong and deep roots, you must have a deep soil for them; and, as plants are fed by their leaves, as well as by their roots, it is advisable to encourage a moderate share of verdure to the plants. Almost all authors on this subject, say, that all but one shoot should be rubbed off, as also all the side or interleave shoots; but this practice appears to be unwise; for the leaves, undoubtedly aid the roots, as these aid the leaves. They ought, therefore, to be spared, particularly in the infant state of the plant. The following winter, or rather spring, such of the cuttings as have grown very vigorously, ought to be pruned down to one good bud from the best shoot, if more than one has grown, by cutting off of the rest close to the shoot with a sharp instrument, so as to leave a smooth and clear wound. Those which have not made a vigorous push are to be left unpruned till the following year.

I am well aware, that I shall be accused of innovation and inconsistency in the practice here recommended; but I beg to observe, that I do not object to very close winter pruning; but that I do not suppress any of the green leaves or branches during the summer, without some necessity, and that I strongly recommend to leave to weak plants as many leaves as possible, to strengthen them; and, when you have strong plants, prune very low down, so that your strong and deep roots, may be able to push a large and vigorous shoot, to be the main body of your vine. Remember that when you have an abundance of good roots, you have always a top at command.

As to my advice of not pruning the first winter after planting, except such plants as may be very strong, my experience, and that of one practical writer, support me. I shall here notice the experiment of this gentleman, which I think is conclusive. It is in page 484, of the 13th volume of the "*Nouveau cours complete d'Agriculture*."

'Mr. David, proprietor at Aix, planted four beds of vines contiguous to each other. He pruned two of those beds, the first year after planting, according to the general practice, and suffered the others to remain untouched. The former announced vigorous shoots, and the second, weak and unpromising ones. The following year, he pruned the four beds, and the result was, that those which were then pruned, for the first time, gave much finer shoots and grapes in greater abundance, and this superiority has remained the same ever since.'

This observation agrees perfectly with what is practised in well conducted nurseries, where weak plants are cut down only the second year.'

If I allow the pruning of the most vigorous plants the first year, it is because some of them are as large the first year, as the generality of them is on the second. They may, therefore, be allowed to bear fruit one year sooner; but their best motive, is thereby to reduce somewhat of their vigour, and render the whole plantation more uniform.

(To be continued.)

ART. II.—*Brief Notes on the Cultivation of Cotton, Rice, Sugar Cane, and the Grape Vine*, by THOMAS SPALDING, of Georgia.

"Darien, November 28, 1827.

Dear Sir,—Your letter of the 18th I have received. It will give me pleasure to contribute, when in my power, to your paper; but I would like you to intimate the subjects, that from time to time you might wish me to investigate; for the many able and intelligent men around you, will leave, I suspect, a limited field for my operations.

When we organized an Agricultural Society at Darien, and which existed for a season or two, and then expired for

the want of patronage, I had wished, in my first address, to call the attention of our community, to the capabilities of our three Southern Atlantic States. I believed, and wished to impress others with the belief, that in *soil* and *climate*, and in *local situation*, no portion of the American continent, from Labrador to Cape-Horn, could promise to man a better, and a happier home. For if, in other regions, the mountains lifted him into the clouds, and gave him views of the picturesque and the sublime, they broke asunder his relations, whether by land or by water. His rivers were obstructed, and his roads prevented.

If in other regions, deeper and richer loams were offered to him, these loams were the deposit of water in mountain valleys. He was, therefore, distant from the ocean, the high-way of nations, while, from year to year, his soils were deteriorating and equalizing themselves with the clays and the sands of the Atlantic States. I wished to call the attention of the community to the Agricultural Resources, that lay within these limits; that ours was the climate of Greece, and Italy, and Asia Minor, and a climate that admitted the cultivation, profitably, of every object of great value under the sun. That while the Planter might grow Rice, and Cotton, and Sugar, and Indigo, the Farmer might grow Wheat, and Wine, and Oil, and Silk. Nor does it require very deep or profound reflection to tell, why these visions of our future destiny, are so overshadowed for the present. A love of change, is stamped upon the heart of man; and, when a region of boundless extent and great fertility, was thrown open to him, to the west, it is not to be wondered at, that he yielded to this first impulse of his nature. But as lovers of our country, I conceive it to be our duty, if we are unable to recall those that may have gone, to do every thing in our power, to fortify those that remain, against this love of change. I shall, therefore, if time and opportunity permit, at some future period, address you a communication upon each of the subjects enumerated; and will now briefly reply to the suggestions contained in your letter.

Cotton.

The details of our Cotton cultivation, if I entered minutely into them, would be but the details of your own. On the coast, it is exclusively the ridge husbandry upon an *in-field* and an *out-field*, or a Cotton crop in ridges, at five

feet apart, after one or two years rest. Manuring with marsh mud, with salt grass, dry or green, from the cow-pen, from the stable, and with Cotton seed, has been practised by many. The success has not, upon the whole, equalled expectation. Of all the substances employed, I prefer marsh mud; because the enemy, now most threatening to us, after the seasons, is what is called the rust, which makes its appearance first upon the leaves, spotting them with brown or red; then straling up the branches, blight and destroy the fruit. Believing this disease, like that of a thousand others to which the animal and vegetable world are incident, is animal, I conceive those manures are best, that furnish no matrix for generating or nourishing this insect brood.

For many years after the cultivation of Cotton was introduced at St. Simon's, where, I believe, all the vegetable matter was carefully burned off the land before ridging; for some years past this has been omitted, and bedded into the ridge. I have some doubts of the correctness of this course. Even Arthur Young was surprised to see greater effects produced, by burning a few tons of straw over the land in Norfolk, than the same straw, either eaten or rotted down would have given. This system of bedding in, has been taken from the good and enlightened Col. Taylor, the author of *Arator*. He is no more—but I respect his memory, for his political opinions; and I respect his memory, for his love of Agriculture; but, a system that was wise in him, in growing Corn or Wheat, might be unwise in growing Cotton. A leguminous plant, that, by its roots deeply penetrates the earth, and, by its succulent leaf, draws much nourishment from the atmosphere. A moderate coat of ashes may operate upon a saline atmosphere, as a moderate dressing of gypsum, does upon an atmosphere, in which salt is absent; and this opinion was, and is, perhaps, still entertained along the coast of the New-England States. The only novelty introduced in the culture of Cotton, within a few years with us, is, that where lands are low and rich, and produce a plant of too great growth, Corn has been introduced. Every third ridge has been planted with Corn; or, by myself, for simplifying the operation, every other ridge is Corn, so that without alternating my field, I alternate my crop. This arrives, at what in Europe, is considered good husbandry. There is no fallow. A Cotton row gives place to a Corn row, every alternate year.

The Corn, by the first of August, is turned down, and the Cotton has space to spread itself, and air to ripen its fruit. This course, with myself, for two years past, has been successful. From eighty to a hundred acres of land so treated, I have reaped twenty bushels of Corn, for the half crop, and I think two hundred weight of clean Cotton. I do not believe I have had one pound per acre less of Cotton, and perhaps little less corn; for I leave a stalk at every foot in the Corn row; I did expect more Corn, but my crop, in each of the two last years, was much injured by the wind which broke down a great proportion of it. The success of this system, of alternating rows of Corn and Cotton, will, of course, altogether depend upon the soil being luxuriant to excess.

Rice.

For many years, near Darien, on the Altamahaw river, a system was pursued, (introduced by the late Major Butler, a most excellent Planter,) of cultivating crops of Rice and Cotton, alternately, upon the same field.

Lands when first reclaimed by damming and draining, and clearing from the wood, were put into Cotton for four years; the first year, the Cotton was large, but not productive; the second year, the third, and the fourth, gave good crops of Cotton; Rice was planted the fifth year, and from that time, the crops were alternated with general success. I was, when a young man, much with him, and I am led to believe that this system gave him about two hundred weight of Cotton per acre, and three barrels of Rice; while the alternate culture kept his land free from the water-grasses, or the grasses of dry culture. The district took his system, and were, as I believe, more or less successful, as they were accurate in observation, and dilligent in culture.

Sugar Cane.

There is no plant that grows, that I know of, which covers the land so completely with its foilage, as the Sugar-Cane. Twenty thousand stocks of equal height and magnitude, with Corn, will grow upon an acre. Four thousand stalks of Corn upon the same land, would be thick planting; and yet Corn is considered every where in Europe and America, the most profitable cattle feed. Arthur Young dwells upon the culture of Maize, as the first agricultural blessing of the

south of Europe. Our population emigrate to the west, that they may grow this crop more extensively, and raise cattle upon it; but, in estimating the relative value of Indian Corn and Sugar Cane, in keeping of stock—cattle, or horses, or hogs, we must remember, that, while Corn bears a relation to roots, for nourishment, as four to one—Corn stands in relation to wheat, as one to three. That is, one pound of wheat is equal to three pounds of Corn, or twelve pounds of potatoes. Turnips and cabbages are still lower in the scale. I should suppose one acre of Sugar Cane stacked in autumn, would feed, from October to March, at least twenty head of large cattle; but it should be crushed and cut, for feeding in troughs.

The Grape Vine.

The culture of the Vine, is in its infancy with us; but my neighbour, Mr. Couper, is now in possession of all the vines of known value in Europe. They will receive from him and myself, fair experiment.

The sea-coasts of our States, have, perhaps, too moist an atmosphere for good grapes; but the gravelly hills of our pine or middle country, will, before long, produce good wine. There is no region on the globe, that in climate or in soil, can surpass those. The atmosphere is dry, the soil is that of the Lafite Estate. The climate is warm, and will concoct the juices of the grape, into strong, and rich, and high flavoured wines. Mr. McCaul of Laurence County, Georgia, has been experimenting for some years upon this subject, and his wine is approved of by many persons. A few years and a few experiments, well conducted, is all that is wanted upon this subject.

(To be continued.)

ART. III.—*Reflections on the State of our Agriculture, especially on the Advantage of Cultivating Indigo, &c.*
by WILLIAM ELLIOTT, of Beaufort, South-Carolina.

Mr. Editor,—I cannot reflect on the policy pursued for several years past, by the Planters of South-Carolina, and of the Atlantic States immediately north of her, without being reminded of that “prudent discipline,” which pro-

voked the exclamation of Faulconbridge:—"Austria and France shoot in each others mouths." We of this State, however, do not hold ourselves chargeable with having fired the first shot!

No maxim is more generally true, than this, that it is the interest of each country to apply itself to the production of such staples as best suit its soil and climate on this basis, so far as agricultural products are concerned, rests the secret of all profitable exchanges, and productive commerce. Now, that this region of ours is more peculiarly the favourite of the Cotton plant, than North-Carolina,* Virginia, and Maryland, is a proposition so universally admitted, as to require no argument in its support. That the States just named, are, from their exposure to a less ardent sun, better adapted to the culture of Indian Corn, is a truth quite as undeniable. It follows, then, that it is the true interest of these States, to grow Indian Corn for our consumption, while it is ours to cultivate our Cotton grounds, and purchase with the proceeds, the Corn requisite for our internal supply. I do not mean to say, that we should push this principle so far, as totally to abandon the culture of Corn for domestic use. That would be unwise; nor would I extend it to such parts of our country as are remote from navigable streams, and where the expense of transportation would add too largely to the cost. But I hold it applicable to all sections of our country, accessible to water conveyance, and particularly to the maritime parts, where a staple of peculiar value is grown. Under these qualifications, I am convinced that it is our true policy, to purchase our supply of Indian Corn, and such, it is well known, has heretofore been our practice.

But our northern neighbours, tempted by the extraordinary price which Cotton bore three years ago, withdrew their force rapidly from the culture of Corn, and applied it to the production of Cotton—and what was the result? Why, that this increased production of Cotton, added to the increase which the same temptation called forth simultaneously in various parts of the world, destroyed the just proportion between supply and demand, overstocked the markets of Europe (the great absorber of the raw material), and produced that fatal decline, under which our country still suffers. Accordingly, the culture of Cotton is no longer

* I except the Southern section of this State.

profitable to Virginia. But can she resume the culture of Corn for export, with the same advantage as heretofore? Will she find the market with us so good as formerly? The same diversion of agricultural capital from Corn to Cotton, which served to swell the excess of the latter, caused at the same time, such a scarcity and rise of the former, that it could no longer be furnished us at the customary rates. Nor could we, with incomes diminished by the fall of price of that staple, which was our great resource, afford longer to purchase provisions at an enhanced price. As a necessary consequence, we have been compelled to withdraw so much of our force from the Cotton culture, as was requisite to provide for own supply of provisions. Hence it is, that the demand for northern Corn, is so materially reduced, and that it does not now enter freely into consumption, but at a price too low to be profitable to the growers. Under existing circumstances, then, we have no option, and we must continue in self-defence to plant our full supply of provisions, until the increased price of Cotton shall induce us to return to that culture. When that day arrives, Carolina and Georgia will apply themselves more exclusively to the growth of those staples which best suit their climate, and become again the liberal customers of Maryland, Virginia, and North-Carolina, for Corn, at remunerating prices.

The sooner the excess of Cotton can be reduced, the sooner shall we witness the return of agricultural prosperity. Every diversion, therefore, of our force from this over-done branch of industry, is of positive benefit to the country. If profit can be derived from this new employment, the advantage will be two-fold, as increased value will be simultaneously imparted to the old; for, was one-third of the land now employed in the culture of Cotton, throughout the cotton-bearing region of the United States, withdrawn from that culture, the product of the remaining two-thirds, would probably equal in market and exchangeable value, that of the entire crop now produced. This region would, therefore, be richer, by the whole value of the new staple thus introduced.

I need say little, to induce those among us, who have good Rice lands, to apply themselves to that culture. Our Planters are too sagacious, not to have thought of that without a monitor. But the diversion thus effected, must have its limit; and we have to look elsewhere, to find a remedy

for the plethora which destroys us. I should delight to see the hills of our upper country, crowned with vineyards, and with olive groves; and our sea-islands and maritime borders, studded with orangeries! This will, I doubt not, happen. But these productions, (which after all, must be looked to as auxiliaries, and not as a chief dependance,) are slow of growth; and years must elapse, before they can afford profit, or that *diversion* of our *agricultural labour*, in which alone a remedy is to be found for our present grievances. I look for relief to other sources—the culture of the Sugar Cane and the *Indigo Plant*. Of the Sugar Cane I shall not now speak, but it may not generally be known, that the Indigo, which was forty years ago, a great staple of South-Carolina, has, in some few sections of our State, never been entirely superseded by Cotton, and is now, since the decline in the price of Cotton, growing again into importance. It is in Orangeburg District, that the culture has never ceased, and that persons skilled in the culture, preparation and manufacture of Indigo, are now to be found. It is vended in small quantities throughout our upper districts, at one dollar per pound—or sold in larger quantities in the Augusta market, at eighty-seven and a half cents. The crop begins to find its way to the Charleston market, where it is purchased for export to the North—what are the prospects of a steady demand—and to what extent the culture may be enlarged—may be gathered from the fact, that one million, one hundred and fifty one thousand pounds, of Indigo, valued at 1,979,500 dollars, were last year imported from foreign countries, for the supply of our *northern manufactories*.*

I subjoin a statement, to show with what expectation of profit, a Planter may engage in this culture. A gentleman of Orangeburg, Mr. Jones, Member of the House of Representatives, (he will pardon me for making use of his name,) cultivated the last year, to a force of ten working hands, well furnished with ploughs, fifty acres of Corn, from which he made an abundant provision crop, and for a market crop, forty acres of Indigo, and forty acres of short staple Cotton. Four acres of Indigo, and four acres of Cotton were thus assigned to each of the ten hands, or, which is the same thing, eight acres of Indigo, each to one-half of the force, and

* Proved from the public documents, which show, that 5,289 pounds only, were re-exported.

eight acres of Cotton each, to the remainder. The five hands employed in Indigo, produced nine hundred pounds, (not a full crop,) which sold in Charleston, at twenty-five dollars the hundred. The five hands employed in Cotton, produced fifteen bales, (a full crop,) which sold at thirty dollars the bale.

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| Thus we have 9 cwt. of Indigo, at \$75—\$675 | } product of five hands in Indigo : |
| And 15 bales of Cotton, at \$30—\$450 | |
| | } product of five hands in Cotton : |

Difference \$225 in favour of Indigo.

Each hand engaged in Indigo, produced 135 dollars ; and each hand engaged in Cotton, 90 dollars—the *gain on each hand* engaged in the Indigo culture, was, therefore, 45 dollars.

While such returns can be realized from the Indigo, it will be seen, that it is not only preferable in point of profit to the short staple, but even to the sea-island culture of Cotton, which will not average eighty dollars gross income to the hand, for the crop of 1827.

Should any of our Planters find, in this statement, an inducement to attempt the culture, they may supply themselves from Orangeburg District, with the seed, and may there engage the services of persons acquainted with the growth and manufacture. Two varieties are in culture—the common and the wild : the latter yields the finer quality, and has the great advantage of requiring to be planted but once in seven years, as it springs annually from the roots, and needs not to be renewed within that period. Nor should it be concealed, that this culture enjoys other advantages, among which may be classed, the small compass into which the crop may be compressed, and its consequent facility of transportation—the early season at which it may be brought to market, and the consequent quick return on your capital ; and lastly, the leisure which it leaves the Planter to apply his force throughout the whole winter, to other objects of culture, or the improvement of his lands.

The intelligent gentlemen, from whom I have derived my information, as to the present condition of this culture, have confessed, that it was not their aim to produce Indigo of the finer qualities. May not this be done with advantage?—does not the great increase in chemical knowledge, since the period when the manufacture of Indigo was a matter of general interest in our country, justify the expectation, that the processes of manufacture will be decidedly improved?

I will not admit that this direction of our Agricultural means impair the health of the country, until I can find that our country has become healthier since the Indigo culture has been superseded by that of Cotton. But I readily admit, that the steeping vats must be unpleasant in those sections where the settlements are thick. In our middle country, however, and in all other parts of the State where lands are cheap, and plantations extensive, these vats may be removed so far from their habitations, as not to prove an annoyance to the cultivators.

Lastly, this is a cheap culture, and does not require the investment of a large capital. The vats may be built for the same sum which would purchase a saw-gin, and the lime used in the manufacture, is not more costly than the bagging which the Cotton culture would require.

The speculations, Mr. Editor, which I have offered in this letter, must be taken for what they are worth—but, for the facts and statements, I hold myself responsible, and remain, Sir, with best wishes for the success of your useful periodical, your obedient servant,

WILLIAM ELLIOTT.

ART. IV.—*On the General Management of Plantations,*
by JAMES CUTHBERT, of *James Island*.

Dear Sir,—Approving highly of your determination to establish a Periodical Work on Agriculture, particularly adapted to the Southern section of our country; and, being well aware that the success and usefulness of such an undertaking, let your zeal and industry be ever so great, must depend upon the co-operation of your fellow-citizens, I shall, whenever in my power, with pleasure contribute my share.

As a proof of my earnestness, I thus early transmit you a few remarks on a subject which, as Planters, we have evidently too much disregarded, viz. method in conducting the operations of our plantations. There is nothing

in which the Planters of this State, generally, are more defective than method. And to this, probably, is to be attributed, under existing circumstances, more than any other cause, the unsuccessful management of our property. The condition of our lands, at one time, was such as to create a habit of carelessness and irregularity in our manner of cultivating them—crops were made in spite of every thing, from the natural strength of the soils; but this condition is materially changed, and our management ought to change also. The advantages arising from a due regard to method, are incalculable. Where the different departments on a plantation are planned with reference one to the other, so that there is no interference, but all bear upon one object, the improvement of the plantation, the security of every thing is greatly increased, and there is a saving of time, labour, and expense.

The considerations which should be particularly attended to in adopting a system, are 1st. That of laying out our plantations in such a manner, that every part should be brought into some use. 2nd. To supply, effectually, the plantation with working animals, carts, wagons, and every necessary implement. 3d. To make such arrangements as to produce the greatest quantity of manure. 4th. To allot to particular negroes the superintendence of particular departments.

1. To lay out our plantations in such a manner that every part be brought into some use, we must come to the determination to consider no part of our lands as unfit for the production of crops. Consequently, to cultivate every acre as suits our convenience and design—with this view, it would, first of all, be necessary to examine into the peculiar condition and quality of the soil, and to correct, as far as in our power, all defects. Some of these may be of a nature not to be remedied in a year, or two, or three; still they are not the less to be attended to on that account. If each year gives evidence of some melioration, there certainly could be no want of inducement to pursue the plan. The advantages contemplated from such a course are, 1st. A decided improvement of our lands, which have been exhausted, both in usefulness and value. 2nd. The opportunity that would be afforded of employing a greater number of labourers on a limited piece of

land—and 3d, the great saving of labour in having our fields always ready for cultivation.

1. Where lands are apportioned into a number of permanent enclosures, to undergo a regular succession of crops, a restraint is at once placed upon that prodigal use of them, which must exist under the present mode of conducting our plantings. If we know we are obliged to cultivate lands that will not produce without manure, we would be much more apt to turn our attention to manuring, than when the choice lies between either manuring a worn-out piece of land, or cutting down a fresh piece. The latter, from custom alone, is generally regarded as by far the easiest. One who leaves every thing to the direction and management of a negro might really find it so; but a Planter, who would give his attention to the business of manuring, and would make proper exertions to carry it on, would readily perceive that the latter would be preferable, and more conveniently accomplished. It might be difficult, at first, to reconcile a Planter to the idea that he should plant a piece of poor and exhausted land, when he had an abundance of fresh land at hand: but a little reflection would convince him of the propriety and policy of submitting, sometimes, to temporary sacrifices for ultimate and lasting advantages. He ought to consider that the fresh land might be brought into cultivation the succeeding year, with more poor land, which he might be able to manure. If he goes on planting none but his fresh lands every year, he must soon exhaust them too; and then he would be compelled, in spite of himself, to plant exhausted lands entirely: but were he to adopt the plan, while he had fresh lands, of planting a proportion of fresh, and poor lands every year, manuring the latter, he would always have the satisfaction to know that he had planted some strong lands on which he might rely, and that his old lands were improving. By this mode, one half of the labour and manure would be advantageously saved.

The usual practice of the low country of this State, as far as my observation has gone, has been, to cut down, enclose and cultivate the best pieces of ground, wherever to be found, without any regard to their location. The effect of this has been to scatter fields in every direction

over a plantation, bearing no relation to each other whatever, or the home establishment. All lands, not under cultivation, are regarded as mere wastes, not worthy of notice. How common is it to observe parts of tracts of land, which have been bought, or valued at fifty dollars per acre, lying out for years, in such condition, as to lead to the belief, were we not aware of the custom of the country, as belonging to no one—as public property—a commons for the whole neighbourhood. It is owing to this careless and immethodical manner of planting and using our lands, that we so frequently hear Planters complaining of so much dead capital. Lands manured well, wherever planted, and undergoing the treatment of attenuation of crops, must, in the course of a few years, be perfectly restored to their original fertility, and consequently might be kept in constant cultivation.

2. When the same lands can be cultivated with success from year to year, certainly a Planter, who has a given quantity, can afford to plant a much greater proportion of it, than when, according to the present usage, a considerable body of it must lie idle every year, in old fields or woods, in order to rest, or to afford, in time, a succession of new fields. Capital then, which would be necessary to purchase additional tracts of land, with the view of keeping a supply of fresh lands, under a different arrangement, could, to a much greater advantage, be appropriated to the purchasing of negroes, to stock, effectually, the original tract. And labour, thus abundantly, though not less profitably applied, would bring all the resources of a plantation fully into operation. Why is it that we see so much land thrown out of enclosure, both cleared and uncleared? It is from the circumstance that the extent of our lands must necessarily exceed the labour of the plantation. A Planter who has twenty workers might plant, and tend, after a manner, one hundred and eighty acres of ground; but a planter, having twenty workers, agreeably to the present mode of managing, must have five or six hundred acres of land. Can twenty workers plant a crop of one hundred and eighty acres—tend it, harvest it, and prepare it for market; and beside, enclose five or six hundred acres, or even keep the fences in order, independent of other extra work? It is not to be done? Hence then the

wretched condition of our fences which are circumscribed, and merely patched up for a few months, and afterwards prostrated the whole winter. Let it be once determined the proportion of land to a given number of workers, and it would certainly be an object with every planter to apportion his property accordingly. It is idle for one who has a piece of land, which he cannot bring into use, to keep it with the idea alone, that he might, one day or other, increase his personal property, and then be able to bring it into cultivation. He who has capital, and can afford to speculate might do so; but he who has a much greater proportion of land than negroes, and has no means of adding to the number of the latter, would, I think, be much wiser in converting a proportion of his surplus land into negroes, than to suffer things to remain as they are.

3. Where lands have been undergoing a series of cropping, and all animals have been kept off, the saving of labour is considerable. Ditches, which require much attention and time in digging, are kept in a state of preservation; and the fields are freed from those bushes and weeds which soon infest them when thrown out and neglected; so that the labour which has heretofore been applied to repairing or re-digging ditches, and cleaning up old fields, could be very profitably directed in collecting manure, and effectually enclosing the plantation. Many planters, no doubt, are deterred, in a great measure, from entering, much more fully than they otherwise would do, into the practice of draining, from its appearing an endless undertaking, having the same job to effect annually. In fact it is out of the question for any one to carry on any improvement of this kind, to any extent, without enclosing permanently his fields, and excluding his as well as his neighbour's cattle. To make a few trifling ditches, in the extent of one's plantings, might be accomplished every year; but to do justice to the land, and the exertions of the planter, a succession of years are required to effect proper draining: therefore, the work of previous years ought to be carefully preserved.

JAMES CUTHBERT.

PART II.

REVIEW.

ART. I.—*A Report accompanied with sundry Letters, on the causes which contribute to the production of fine Sea-Island Cotton; read before the Agricultural Society of St. John's, Colleton, on the 14th March, 1827.* By WHITEMARSH B. SEABROOK, Corresponding Secretary. Published by order of the Society. Charleston. Miller. 8vo. pp. 36. 1827.

(Continued from page 32.)

It is a subject of unfeigned regret to every enlightened patriot, that so little attention has been paid to Agriculture as a science, in this portion of the Union, and that so much indifference has been generally felt towards new inventions and improvements in cultivation. Unhappily an impression seems to have existed almost universally, that rearing the productions of the earth, was simply an affair of servile labour, and that the only mental exertion requisite, was that employed in a vigilant superintendence, that the prescribed quantity of work should be actually performed. While an apprenticeship of several years has been deemed absolutely necessary to qualify a man for any of the mechanic arts; the most important of all arts, that of managing the culture of the soil, has been habitually committed to unskilful unpracticed hands. And while minds of a superior order, improved by a finished education, have been eagerly sought for, to fill other liberal professions, that of superintending the productions of the earth, has usually been deemed unworthy the attention of men of genius and learning. And yet, if it be true, that Agriculture is the foundation of our prosperity, and that its preservation and success are of indispensable necessity; it would seem to follow, that its guardians occupy a station of unrivalled importance, and that its promoters are to be numbered among the noblest public benefactors. Never was there a more mistaken notion, than that science and literature are of no essential benefit to an accomplished Planter. On the contrary, there is hardly any sphere of life, which opens a wider field

for scientific research, or affords more constant occasions for the most enlarged information. The highest degree of preparation for the employment of a Planter, would require literature so extensive, as to bring within his reach, all the treasures of ancient practise and modern improvements in this noble art—an accurate knowledge of its present state in various nations, so as to avail himself of all contemporary discoveries; and such a skilfulness in Geology and Chemistry, as to be able to apply the principles of Science and the discoveries of Philosophy to various soils, manures, and methods of cultivation. Such attainments can only be reached but by an enlarged course of liberal education. And men of the highest mental cultivation, cannot be more usefully and honourably employed, than in explaining and improving the science and practise of Husbandry. The general neglect with which this community formerly treated improved systems of Agriculture, resulted from peculiar circumstances. Good land was abundant; the immediate profit of clearing new fields, was greater than that afforded by manuring old ones; and the demand for our staple productions so great, that the only solicitude felt, was, to increase the quantity as much as possible. But a new era has commenced, and corresponding changes in public sentiment and general practise ought to follow. The prosperity of Cotton Planters now depends upon their success in preserving or restoring the fertility of lands which have been long cultivated, and upon their skill in producing an article of superior excellence. Whoever will seriously reflect upon the ruinous results to this community of an absolute failure of the cultivation of Cotton, and the disastrous consequences which must ensue from a loss of preference in the market, cannot fail of being convinced of the vital importance of Agricultural improvements at the present time, and of the pre-eminent claims of those who are zealously engaged in this cause, to encouragement and gratitude. All the efforts which have yet been made, though worthy of high commendation, are, we trust, merely introductory to the more extended and decided measures, which the magnitude of the object demands. It seems necessary, that the whole State should engage with active zeal in this cause. We hope to see a decided exertion of Legislative patronage, in favour of Agricultural improvements. And it is greatly to be desired, that the time may come, when eminent skill in this

noble art shall open the fairest avenue to office and influence; and when superior attainments in Agricultural Science shall present the most attractive prize to youthful emulation.

The respectable society, whose Report is before us, have gone forward in this important enterprise. Let every district in the State make the same exertions, and evince similar zeal and intelligence, and the happiest anticipations of the prosperity and affluence of South-Carolina may be confidently cherished. To Mr. Seabrook, the author of this Report, we consider the community under special obligations. He has set a noble example of patriotic devotedness to the public good. No talents, hereafter, need be regarded too splendid, no literature too extensive, no character too elevated, to be employed in Agricultural improvements.

After the remarks made in our former number, upon the first part of this interesting pamphlet, we shall content ourselves with inserting the remainder of it entire; reserving the accompanying letters, and some concluding remarks for our next.

“The extraordinary difference of price in one of the two great staple articles of this State, has been accompanied with a proportionate depreciation of real property. Land is valuable in relation to its susceptibility of rewarding the labour and ability of the husbandman. Although, by individual enterprise and agricultural associations, a marked and general improvement has been effected in cotton; yet, as if a reversion of a fundamental principle of political economy had really occurred, in the same ratio has the income of its growers been diminished. While, perhaps, one planter in every hundred, is safely gliding down the placid stream of prosperity, ninety-nine, in the habitual exercise of acknowledged skill and assiduity, are compelled to stem the rapid current of mercantile predilections. If the profession could be satisfied by unequivocal tests, that the difference in cotton absolutely is, what the purchaser in America declares it to be, they would either direct their attention to some other article of agricultural profit, or alter their established system of management and supervision. To demonstrate the existence of that difference and its probable causes, is the main design of this report. In further elucidation of the subject, the Secretary would add, that excess of production, and the perfection to which the manufacturing establishments of Great-Britain have attained, are also conspicuous agents in the great revolution which has effected so seriously the interest of the cotton planter. Manchester, seventy years since, furnished its neighbourhood only with a few domestic

articles. It now, in part, supplies the civilized world with its useful and elegant productions. There, as elsewhere, is fabricated from cotton, those articles of apparel of which wool and flax once formed the raw materials. As manufactories multiplied, demand and supply proceeded *pari passu*. This state of things did not long endure, for although the present market for English manufacture is coextensive with the habitable globe; yet, the raw material, from superabundance of capital, is infinitely too plentiful. Diminution of profit has been the necessary result on the part of the grower. From the period that the supply exceeded the demand, may be dated the origin of that, to many, inexplicable system of apparent favoritism, which now characterises the market. The manufacturer has long known the cotton fibre to be variant. His spindles, &c. are fashioned accordingly. The machinery for spinning the finest numbers are alone suited to this especial purpose. Their owners are compelled, from the force of circumstances, either to purchase the small quantity of cotton adapted to them, which the market affords, or to submit to the loss incident to an unemployed capital.

“In an investigation of the causes which create so great a difference of price between the finest Sea-Island and other black seed cottons, there is one, perhaps, which the planter has not duly considered—the difference of the price of the raw material, compared with the value of the fabric manufactured from it. The price of the raw material principally determines the value of the coarser fabrics, but little labour being required for their production, while the price of the raw material necessary to the production of the finer fabrics, is only a secondary consideration, as the labour necessary to their completion forms the principal ingredient of cost. The cottons raised in this State, vary in their adaptation for spinning given numbers, from 80 to 200 hanks of yarn to the pound.* The quantity of cotton adapted to the spinning of the higher numbers is comparatively very small. It is an axiom in political economy, that when supply is not equal to the demand, prices will rise in proportion to the difference. The competition to obtain the finest cottons will be commensurate with their scarcity, and an additional price will be paid for them, in consequence of it. The spinner of a very high number can afford to pay the highest price for the raw material; he competes fearlessly, under the firm conviction, that there is no danger

* A hank of cotton thread or yarn measures 800 yards. To show the great difference existing between the price of the raw material compared with the article manufactured from it, it is only necessary to notice the facts, that five yards of inferior fabric, worth at the manufactory less than 10 cents per yard, are manufactured from one pound of inferior cotton wool, whilst a pound of the finest cotton wool manufactured into the most costly fabrics, particularly lace, would command hundreds of dollars.

of the market being overstocked with the article manufactured from this description of cotton. He has also a good prospect of realizing a fair profit on his outlay, from the consumers being in the opulent classes of society. Fashion and pride never undervalue the means of their gratification. The more costly a commodity, the more certain is it to command the homage of an obedient purse. This is an advantage which the manufacturer of *very fine cotton* (limited as he is in the supply) possesses over the manufacturer of an inferior article.

"In Mr. Mathewes' letter is the following declaration of a distinguished spinner of Manchester, on which the Secretary would now briefly animadvert. "Some years ago," says he, "we readily found among the cotton of different planters, a sufficient number of bags to spin all the fine yarn that was required—at present, when the consumption of fine yarns is doubled, *we do not find among all the cottons we examine, one bag per annum.*" The same spinner further remarked, as personally stated to the Secretary by Mr. Mathewes, that he had been compelled *to adapt his machinery to the coarseness of the fibre.* In the opinion of planters of experience and observation, the quantity of cotton now made to the acre is much less than formerly. Mortifying, indeed, is the reflection, that with greater practice, more skill, and higher attainment in agricultural knowledge, that we should now have to record a positive retrogradation in our calling. The deterioration in regard to the quality of cotton, appears referrible to two prominent causes—injudicious manure or its wrong application and defective seed. Manuring, as a system, commenced in this section of the State about ten years ago. At that period, the market value of cottons did not shew the existence of an essential difference in their quality; hence, the planter aimed at quantity only. The perseverance in this design has given a longer, and, perhaps, a stronger, but manifestly a less silky staple, than a contrary course would have ensured him; for, as already suggested in this report, poor sandy land will yield a finer fibre than a fertile soil of the same texture. The same result is equally certain from lands naturally productive, when compared with soils artificially enriched. If these positions be correct, the inference is fairly deducible, that the manures* in common use, do not tend to improve the fineness of cotton. In the accomplishment of this object, it would be more advisable to rely exclusively on the inherent power of the soil, should it be of a favourable constitution, than to pursue the practice which experience has clearly evinced to be predicated on error. But is there no manure that can effect the double purpose of a profitable harvest, with its desirable correlative, a fine quality? For every description of soil in which

* Stimulating Manures.

sand predominates, the Secretary is warranted in averring, that salt *clay* mud is that manure. The *rationale* of its salutary influence is to be found in the acknowledged principle, that every soil is improved by the proper admixture of earths. The attraction between earth and water is well established. From this fact, the celebrated French Chemist, the Chevalier Cadet de Gassicourt, after a series of successful experiments, drew the conclusion, that the fertility of soils depends, in a great measure, on their capacity to absorb and to retain moisture. Clay has the strongest attraction for water, but abandons it the soonest: sand absorbs water in least quantities, but retains it longer than clay. If, therefore, by any process, these two soils could be judiciously admixed, their texture, *a priori*, would be ameliorated. The mechanical structure of the particles composing them; their adaptation for the admission of air, and for the percolation of moisture, would ensure to the union of the two earths, a soil admirably subservient to vegetation. Salt *clay* mud* acts rather negatively, than positively. It does not *add* very materially to the product of cotton, but from its conservative and maturative power, the fruit, which the combined operation of soil and season may have disclosed, it is nearly certain of retaining and ripening. In a propitious season, stimulating manures will yield a larger crop than salt mud; but for a series of years, the latter will more certainly repay the industry and skill of the planter. A second cause for the deterioration of the quality of cotton, is to be traced to the probability, that the best seed has been rejected. It is known that the seed of short staple cotton is entirely coated with down. As often as the Sea-Island planter has met with this description of seed, he has, unreflectingly, cast it aside, as unsuited to his purpose. Again, in every field, it were common, at one time, to discover numerous plants, (termed male cotton) with seed generally covered with wool. At present, by the authority of the master, the labourer has so effectually eradicated them, that a solitary intruder is rarely to be met with. The male cotton is comparatively unproductive, but its texture is distinguished for its silkiness. The operation of the *farina fecundans* of plants no longer rests on surmise and conjecture. By the discovery and observation of Mr. John Bywater, of Liverpool, on *animalculæ infusoriæ*, and on the physiology of plants, we are furnished with some curious and interesting information on this subject. His examinations go to shew, that the small capsules of the *farina fecundans* give out, when in contact with water, an abundance of *animalcules*, which are supposed to be the mysterious agents by which vegetable secretions are carried forward. May it not be a

* The influence of salt mud on the quality of cotton, has already been adverted to.

wise provision of nature, with a view to the preservation of her fruits in their original excellence, that there should exist among every species of vegetable, certain plants, possessing a peculiar attribute; which, by the agency of its pollen, renders it (the particular species of vegetable) more valuable? If this be true, the male cotton is a treasure, not a nuisance. From the testimony of our oldest planters, the seed of cotton formerly was much more woolly than now-a-days. The Persian cotton mentioned by Mr. Mathewes and probably alluded to by Mr. Coffin, produces seed that differs but little from the seed of *upland* cotton. These facts lead to the presumption, that in relation to this branch of his profession, the planter has been guided by prejudice—not by reflection and experiment; and, that in avoiding the seed which would seem to partake of the character of short staple cotton, without preparatory examination, he has not consulted his true interest.

“In accounting for the diminution of the *quantity* of cotton to the *acre*, the Secretary, uncertain of the existence of the fact, would, unwillingly, enter on the boundless field of speculation. A few brief remarks, however, may not be deemed either inappropriate or obtrusive. That our lands are becoming annually more exhausted, is a position too apparent to need illustration. That the proper means of their resuscitation have not been adopted, appears to be equally undeniable. Among the many causes which may have conspired to produce this state of things, the Secretary would advert to the system of over-cropping; the indiscriminate use of certain manures for every soil, and the injudicious manner of their application. The practice of planting a quantity of land, unsuitable to the labour employed in its cultivation, has been attended with such signal disadvantages, that the reflecting mind is at a loss to conceive the motive of its continuance. If this were the era of ignorance, we would readily yield our credence to the plausible suggestion, that the larger the acre of ground under tilth, the greater would be the product.—This theory, which common usage would seem to have confirmed, experience alone teaches us, depends for its correctness on the physical force employed. One hundred acres, cultivated by twenty labourers, might yield \$6000, but if seventy acres, with the same number of attendants, but under different management, could be made to realize the same amount, it is manifest, that the difference between the two fields (thirty acres) is to the owner, so long as he disregards the practical admonitions of his neighbors, an unproductive capital. The plantation of Mr. Burden is more valuable to him, than the plantation of A. or B. with twice the extent of arable land, is to either of them, under the ordinary course of tillage.

"The manures on which the planter almost universally relies, are of a direct stimulating tendency. That these manures, if properly applied, are well calculated to increase the product of every crop, experience and reason declare; but, that their beneficial influence on the quality of cotton is, at least, problematical, has been attempted to be shewn. The common mode of applying manure, is to strew it immediately below the list. The Secretary inclines to the opinion, that this practice is radically wrong, and that it has contributed most materially to the curtailment of the income of the planter. When the tap-root of cotton comes in contact with it, the plant is preternaturally excited, and its eventual productiveness depends entirely on the *regularity* of the season. In a drought, from the desiccation of the sap, by the extreme heat which the manure generates, the leaves wither, and a general predisposition to disease is formed. If the dry weather be followed by one or more heavy showers of rain, the plants assume new vigour and life, with the certain consequence of a loss of all the pods which may not have attained a mature age. Should cotton on a weak soil, from the excitement of the season, begin to grow anew, the prospect of the planter is seldom blighted; but the same plant, on lands artificially enriched, acted on alike by an invigorating atmosphere, and the mass of manure which lies in contact with its roots, rarely escapes an irremediable injury. Fields that exhibit the appearance of an abundant harvest, are frequently, from this cause, so utterly denuded of their fruit, as scarcely to refund the seed with which they were sowed. A second growth, therefore, is to the cotton plant, as destructive in its consequences, as the depredations of the caterpillar. In its avoidance, have we consulted experience, or have we been guided by the common principles of vegetable physiology? No! impelled by hope, and resting on the unreflecting impulse of the mind, we persist in a system which leads directly to repletion or depletion. It is, therefore, extremely probable, that the most effectual means afforded us by nature, of preserving the fertility of our lands, is so often injudiciously used, as to avert the very effect intended to be produced. When this occurs, the planter patiently submits to his misfortune, under the conscientious, but false assurance, that the seasons have been unpropitious.

"As a partial remedy for the evil, incident to a new growth, the Secretary would advise the plan of broad-casting manure. By it, manure becomes more generally incorporated with the soil; the cotton plant is never forced unnaturally, and every fibre partakes gradually, and alike, of the food which is presented. To the causes which have been enumerated, as contributing, in part, to the reduction of the quantum of cotton to the acre, may be added, too much nursing at the bearing season, and the prevalent custom of hauling an excess of dirt to the plants, particularly

when it is wet. The whole secret of the husbandry of our fathers, who, if we please, were negligent planters, consisted in a clean field. They never worked their crops oftener than necessity demanded. Their creed appeared to be, no grass, no labour. To use the hoe in anticipation, seemed to them, like administering medicine to a healthy man to prevent disease.*

"The Secretary having concluded his observations on the various interesting subjects, which the letters under review have elicited, would subjoin but one or two remarks.

"The tendency of population is to increase beyond the means of subsistence. This is particularly true of St. John's, Colleton. Its population duplicates itself every twenty years. By the present or unimproving system, the arable land of the parish would not more than suffice to meet the exigencies of one third of the rising generation. If then, private interest and political considerations invite us to an imitation of Mr. Burden's practice, so far as to cultivate the one half of the land, annually planted; and, to aim, hereafter, at the quality, rather than exclusively at the quantity of the crop, it is apparent, that the parish would be able to maintain, in equal abundance, double the number of its present families. As we estimate then, the endearing tie which binds us to our offspring; as we appreciate the elevated station to which the Agriculture of South-Carolina legitimately aspires, so should our future geoponical schemes be governed and directed. Our pertinacious adherence to the raising of a single article, with its usual concomitant—over production, has created a train of evils, which naught but a fundamental change of husbandry can effectually eradicate. The Secretary is aware, that the prejudices of a planter are strong and difficult of removal. He perseveres in a settled custom, although by it, his profits continually diminish. His repugnance to test a new project is a truth of daily observation. You may convince him by argument: you may clearly illustrate your position by examples; yet, you cannot swerve him from his olden course. At length, perchance, the desire of novelty leads to an experiment. If it succeed it is again subjected to future trials. The contagion, in time, is communicated to his neighbour, and thus, the old system and the new practice, are, slowly, the one abandoned, and the other introduced. As inveteracy in his agricultural habits constitutes a trait in the character of the planter, it remains to be determined, whether it is a feature which adorns the mind or obscures the understanding. Interchange of sentiment not only guarantees success in his profession, but conduces most powerfully to the

* To avoid misapprehension, the Secretary would state, that the oftener cotton is hoed, to the period when the fruit begins to disclose itself freely, the more vigorous and productive will it be. Afterwards, the hoe should be used cautiously, and never later than the 10th of July.

formation of friendships, and the annihilation of untenable opinions. This suggestion, at all times true, is peculiarly applicable to this Society. Its members inhabit three distinct sections of the same parish.* Although, in the formation of the human character, locality and society exercise unlimited sway, it is hoped, that in all matters, touching the welfare of this association, the interest of the parish, and the prosperity of the State, there is but one mind and one common feeling. That we may become better acquainted with one another; that we may, hereafter, unite more fervently to elevate the agricultural character of St. John's, Colleton, and to continue our acts of individual comity and kindness, is the ardent and reiterated supplication of a heart devoted to the promotion of the public weal." pp. 11-20.

(To be continued.)

SELECTIONS.

ART. I.—*Of the General Cultivation and Management of a Kitchen-Garden.*

(Continued from page 38.)

The cultivation of a garden includes the performance of all those things that are requisite, in order to a reasonable and prolific production of the various vegetables and fruits grown therein. By the management of a garden, is to be understood the keeping it in such an order, as that it may not fail in those impressions of pleasure it is calculated to afford. A kitchen-garden, as well as a garden professedly ornamental, may and ought to be agreeable to walk in, as well as profitably cultivated. A gardener may be well acquainted with the culture of individual vegetables and fruits, and yet very deficient in the general cultivation and management of his garden. The following sections relate entirely to general practices conducive to these objects, and they deserve to be carefully studied by the young gardener who aspires at any degree of eminence in his art.

* The parish of St. John's, Colleton, is composed of the Islands of Edisto, John's and Wadmalaw. The Society consists, principally, of the planters of the three Islands.

Culture and Management of the Soil.

The soil, Marshall observes, "must be first attended to, always to keep the fruit-borders in heart, and the compartments in a proper state for use, when called upon to receive either seeds or plants. Ground should never lie long without stirring; for the soil of a garden should be in a free, sweet, and rich state, by proper digging, &c. or no great things can be done, as to early, handsome, or well-flavored productions. It should be free, that the roots of plants may not be impeded in the quest of food; sweet, that the food may be wholesome; and rich, that there may be no defect of nutriment.

Trenching the vacant ground in a garden does good to all soils in the autumn and winter seasons, and that in proportion to its strength, being indispensably necessary for clays to separate and ameliorate the parts. The light soils may do by being only rough dug, which is a method that stronger soils will be also benefited by. The soil would be still farther improved, by re-trenching, or rough-digging, once or twice more in the winter, if the opportunity offers, particularly if strong or stubborn. Let the ridges lie E. and W. except the ground be a slope, when they may correspond.

The trenching of vacant ground, Abercrombie observes, "should be forwarded as much as possible in winter, and early in spring. By repeatedly exposing a new surface to the action of the frost, a greater quantity of the soil is ameliorated. In every case where it is intended that the ground shall lie fallow any time, it is advisable, in digging trenches, to turn up the earth roughly in ridges; forming, parallel to each trench, a single ridge of the same width, in order that the soil may be more effectually mellowed, pulverised, and renovated by the weather. These ridges can be expeditiously levelled, for the reception of seeds and plants; which is a further improvement of the ground."

To conserve the fertility of kitchen-garden soil—the mode adopted by Nicol, and practised by the best Scotch gardeners, is the most scientific of any. Nicol observes, that, as kitchen-vegetables do best on what is termed new land, it is a common complaint among gardeners, that their ground, by being, as it were, worn out, will not produce certain kinds of vegetables; not that it is poor and hungry, or altogether unfitted to the production of them, having for

merly produced them in great abundance, but that the surface has become tired of these crops, in the same way as a field sown with the same sort of grain for two or three years in succession, ceases to produce that grain in perfection. The method which he practised with success is as follows:—

First, it is necessary to have a depth of soil from twenty-four to thirty-six inches; in which case it is obvious, that whatever the depth of the natural soil is deficient of, twenty-four inches must be made good by carrying in soil from fields of good quality. Then take three crops off the first surface, and then trench *three* spit deep, by which the bottom and top are reversed, and the middle remains in the middle. Take three crops off this surface, and then trench two spit; by which the top becomes the middle, and the middle the top. And take also three crops off this surface, and then trench three spit; whereby that which was last the middle, and now top, becomes the bottom; and that which is now the bottom, and was the surface at first, now becomes surface again, after having rested six years. Proceed in this manner alternately; the one time trenching two spit deep, and the other three; by which means the surface will always be changed, and will rest six years, and produce three.

Hence there will always be new soil in the garden for the production of wholesome vegetables; and hence also will much less manure be required, than when the soil is shallow, and the same surface constantly in crop. He adds, that he would not advise the soil to be more than three feet deep, as the surface might be buried too deep from the action of the weather, and influence of the sun. Where the soil is only so deep as to allow of trenching two spit, by trenching every third or fourth year, the ground will rest half its time; and if judiciously managed, and cropped in proper rotation, wholesome vegetables may be produced on it for many years successively. It is not intended that the whole garden should be trenched over the same season, “one half, or a third part at a time may be more advisable, and also more convenient.”

Manure.

When manure is applied, the ground is not to be glutted with dung—for, as Marshall observes, “a little at a time, well rotted, is sufficient, so that it comes often enough, as

opportunity and the nature of the cropping may dictate. It is indeed a sort of rule with gardeners, that ground should be dunged every second year; but circumstances may make more or less of it necessary, and rules should never be indiscriminately applied. If dung is pretty well reduced, much less will do, and let it not be buried too deep; but if it is otherwise, lay it low, to be dug upwards another time, when it is more consumed. It is an excellent way of manuring, where the superficial soil is much exhausted, to dig slightly, and spread over rotten dung, late in autumn, in the winter, or early in spring, and so let it remain, till the ground is wanted, before it is dug in; which should, however, be slightly dug before the manure is put on, or forked in, a little afterwards. This method is particularly to be recommended, where crops of onions, leeks, and such superficial rooting plants are to be."

Dung used in great quantities, and lying in lumps, harbors worms, grubs, and insects, and makes plants grow too rampant and rank-flavored. Carrots it cankers, and it disagrees with many things; is apt also to make the ground parch, and burn the crops sown upon it in a hot summer. On these accounts, some persons have been induced to dress their gardens only with rich fresh earth; which, if they do not overcrop, will do very well, being accompanied with good tillage; which alone is of much use, and is essential to due cultivation. Vegetables are always sweeter the less dung is used, and little need be used when the natural soil is good and deep; for the earth may be so dug, that what is at the top one year, may be at the bottom the next; which is a manœuvre evidently advantageous, as a good part of the strength of the top soil washes downwards. The method just recommended, of letting dung lie on the surface for a time, is good also, as it abates the rankness of it. Lime sweetens.

The periods for applying manures, necessarily depends on the soil and the mode of cropping. If the original soil be poor, it may require aid from dung every year; but, in general, the compartments in which annuals and biennials are cultivated, will want to be thus recruited at least once in two years, when the last autumn crops are off the ground. Beds occupied by perennials, cannot sometimes receive any material accession of new earth or compost for a number of years; and therefore, when the stools are worn out, the re-

pairs of the soil should, in proportion, be substantial, and go deep. Dung is fit to manure beds for receiving many sorts of plants, when it has lain in a heap from three to six months, and is beginning to be well rotted. But for particular purposes, it should lie from one to two years. Apply it for annuals, two or three inches thick; for perennials that are to stand long, six or eight inches thick; spreading it equally, till the bed into which it is to be dug is covered: then trench it in a moderate spade deep, that it may be within easy reach of the roots of the plants. In preparing ground for perennial stools, a portion of the dung should be deposited six inches deeper.—(*Abercrombie.*)

Manures are to be applied either as simples or compounds; but the latter method Nicol considers the most eligible. He agrees with Jethro Tull in stating, that if they have not undergone a proper fermentation, their effects are, giving a rank and disagreeable flavor to fruits and vegetables; and if an immoderate quantity be applied, of producing a considerable degree of unwholesomeness, and tainting the juices of all plants.

A mixture of stable-dung, sea-weed, lime, and vegetable mould, which has lain in a heap for three or four months, and has been two or three times turned during that period, will make an excellent manure for most kinds of garden-land. Also, cow-dung, hog-dung, and sheep-dung, mixed with soot or with wood-ashes. Pigeon-dung and vegetable mould, well mixed, will also make an excellent manure for heavy land; or even for lighter soils, provided the pigeon-dung be used sparingly.

Neats-dung and hog-dung, slightly fermented, are very fit and rich manures for light hot soils. For those of a dry, absorbent nature, none answer better, or last longer; by reason that they retain moisture for a greater length of time, and also ferment more slowly than other dungs.

Pigeon-dung, lime, soot, ashes, &c. should never be applied as simples; the quantity required being comparatively small, and the regular distribution of them difficult, without the admixture of other matter. But these should generally be applied to compost of good earth, turf, or sward, or of cow, or other dung of a cool nature; applying them in quantity according to the cold or the hot nature of the soil to be manured, allowing the compost a sufficient time so incorporate, and mixing it thoroughly.

Marl is a good manure for almost any soil; and it may be applied as a simple, with as much propriety as any of the kinds of cattle-dung, or even of vegetable earth. The kind called shell-marl, is much to be preferred, and should be freely applied to strong lands, but more sparingly to light; the loamy kind being best adapted to light lands.

Stable-dung, if used as a simple, should not be applied in too rank a state, nor should it be much fermented. It should generally lie in a heap for four or five weeks; during which time it should be turned over once or twice. A ton of it in this state is worth three that has been used in the hot-bed, and is a year old. This manure, and indeed dung of any kind, when applied as a simple, should never be carried from the heap to the ground, till it is to be digged in; as, by exposure to the air, part of its virtues evaporate, and it is the less effectual.

Sea-weed should be applied instantly after landing. If used as a simple, is even greater than the above; as it instantly corrupts, and its juices flow downwards, and are lost. If this manure be used as a compound, the heap in which it is compounded, should be more frequently turned on its account, that none of the juices may be lost, but that the other part of the compost may absorb them.

Horse-dung, and the dung of sheep, deer, and of rabbits, are most eligible for cold wet soils; and all these, or any of these in compost with lime, will be found beneficial. For such soils also, a compost of coal-ashes, pigeon-dung, and lime: or of wood-ashes, whin-ashes, fern-ashes, and stable-dung; or of deer-dung, rabbit-dung, soot, and burnt sward, will make a good manure.

Manures are to be applied in quantity according to their quality. Hence the dung of pigeons should be applied in much smaller proportions than that of horses, it containing a greater quantity of volatile salts; and so the ashes of vegetables containing a portion of fixed alkaline salts, being more powerful, are to be applied in still smaller quantity. So also, lime being the most powerful of the calcareous kind, should be applied, in ordinary cases, in much smaller quantity than marl.

Vegetable mould may either be used as a simple, or as a compound, and may be applied with equal propriety to all soils. None can be hurt by it in any degree, since almost every plant will grow luxuriantly in it alone, without the aid

of any soil or manure whatever. It seems to be the ambrosia, and the dunghill drainings the nectar, of vegetable life. The latter, however, if too freely indulged in, is rather of an intoxicating nature.

Where economy, rather than the flavor of culinary crops, is an object, recent dung is unquestionably to be preferred; and, in fact, is so, by most market-gardeners: John Wilmot, an extensive market-gardener at Isleworth, (Eng.) bears testimony to this fact. A given weight of recent stable-dung, he says, will not only go farther than the same weight of rotten dung from old hot-beds; but will serve as a manuring for the succeeding crop, which, with old dung, is not the case.

Cropping.

A change of crops is founded on the generally acknowledged fact, that each sort of plant draws a somewhat different nourishment; so that after a full crop of one thing, one of another kind may often be immediately sown. "Nothing tends more to relieve the soil," Abercrombie observes, "than a judicious succession of crops; for plants of different constitutions, not only strike to different depths, and in different directions, with their roots, but the terminal fibres or feeders of the roots, appear to take up separate and peculiar constituents of the soil, and to be indebted for support to some property imparted by the earth in very different degrees. The duration of the vegetable, its short or protracted existence, is a great cause of diversity of effect as to the quantity of aliment drawn from the soil. Another mark of distinctness in constitution, is the character of the root, as it may be fibrous and tender, or fibrous and woody, or bulbous, or tuberous,—extended or compact; another, the form and magnitude of the herb, and the proportion of fibrous or ligneous substance in the stem and branches. A fourth index of a separate nature, is the succulency or hardness of the leaves, and the quantity of pulpy or farinaceous matter in the parts of fructification,—as the leaves may be the edible part, before the plant is matured; or the seed-vessels, as in pulse, may hold the produce for the table; or the esculent part may consist of fruit-enclosing seeds. To apply this practically:—we will suppose a strawberry-plantation requires to be renewed; and the stools seldom continue fully productive more than three or four years;—in-

stead of introducing young strawberry-plants into the same bed, entirely eradicate the old plantation, and let it be succeeded by a crop of beans, or some other esculent, as different as may be in constitution and habit. In the same manner, let the new plantation of strawberries follow some light crop which left the ground in a good state, or which allowed it to be trenched and followed for an interval, whether it were an annual or biennial. It is a rule, from which only extraordinary circumstances can warrant a departure, never to plant a new set of perennial stools on the ground whence a plantation of the same or a similar species, having worn itself out, has just before been removed. On the contrary, crops which strike deep, and occupy the ground long, should be succeeded by plants which pierce but a little way under the surface, are drawing in the least degree, and soon come off from the short term of their vegetable life."

A studied rotation is advisable, in all cases, according to Nicol; so as that no crop of the same class may immediately follow another. To facilitate this measure, the kitchen-ground should be divided into a number of portions, and a journal or note-book should be kept, with a reference to their numbers. In this journal, whatever relates to their cropping, manuring, trenching, or fallowing should be recorded, for reference and guidance as to future cropping. Nicol, while practising as head gardener at Raith, Wemyss Castle, and other places, kept a regular journal of this sort; he published it in his *Kitchen Gardener* in 1802, and he tells us, in 1816, that it had been approved and adopted by many practical gardeners.

By planting out currants, gooseberries, and raspberries in compartments, instead of growing them in single lines, particularly if these be properly managed, an opportunity of changing crops might further be afforded; as these should not stand longer than seven or eight years together, before the plantations are renewed.

Strawberry-plantations, under proper management, should be renewed every four or five years; and thus likewise might an opportunity of changing crops be afforded. Also, by the renewal of artichoke and asparagus plantations, which should be done every seven or eight years. In managing all the above-named articles on a large scale, new plantations should be made every year, to a certain extent, which would throw a certain proportion of ground regularly into the rotation.

Esculents might be cultivated in classes, and thus a sort of rotation, though not very complete, might be produced; and the brassica tribe, the leguminous family, the tuberous or carrot-rooted kinds, the bulbous or onion kinds; and the lighter crops, as salads and herbs, might succeed each other.

Close crops, as onions, leeks, carrots, &c. are conveniently and neatly cultivated in beds of from four to five feet widths, with alleys of a foot to eighteen inches between them.

Resting garden ground. Market-gardeners, Nicol observes, who are generally good managers, and must of necessity make the most of their ground, in order to maintain their families, and be able to pay high rents, have found out the utility of resting their land, and of following a regular rotation in cropping it, at least in the culture of the principal articles, and as far as the nature of the thing will admit. The best managers sow out a portion of their ground every season in grass, clover, or barley, which is used as green food for their horses and cows. Very generally, the barley is sown along with the clover, merely to nurse and shade it, being cut down and not allowed to ripen. The clover is sometimes dug up after the first season, if land for market-crops be scarce, but more generally it is allowed to lie a second year. By good managers, the ground is never sown down in a hungry state. Land that has been under esculent crops for many years together, and is, perhaps, glutted with manure, may be cleansed, as it is termed, by a scouring crop of oats, wheat, or rye, which, if thought necessary, may be repeated. If trenched to its full depth afterwards, it will again be fit for the production of culinary crops in great perfection.

The seasons proper for furnishing the ground with every particular vegetable should be well attended to, that each may be obtained as its nature will permit; and of the seeds and plants we use, care must be taken to procure the best of the kind, lest after all the trouble of cultivation, disappointment as to vegetation or quality should ensue. The principal time for sowing and planting the articles raised in the kitchen-garden falls in the spring months. It is necessary to lodge some sorts in the ground as early as January; but February, March, and April, are the months in

which the principal supplies from summer crops are provided for. From April till September, and even October, many sorts are sown and planted, in smaller portions, for successive crops. Particularly hardy esculents are also sown or transplanted principally in autumn, for a supply as well in winter as in spring, and early in summer. Other kinds are inserted occasionally as late as November and December, to stand wholly over the winter, in rising growth, for early crops and for main crops the following summer; such as peas, beans, cabbages, and cauliflowers. To obtain early crops of favorite esculents which are more tender, several kinds are sown and planted in hot-beds in winter and spring.

The quantity sown and planted is to be determined jointly by the demands of the family, and the portion of ground that can be spared; but it should be always a rule, to sow and plant more than probably enough for the family, as more may happen to be wanted than expected, and a cross season or other accident may occasion a failure. As exact rules cannot be laid down, the exercise of a little judgment will be necessary, in order to proportion crops alike; for to have too much of one thing, and too little of another, is disagreeable and discreditable. Respect should be paid to the natural duration of crops, some going off soon, and others being lasting, and that too according to the season they are propagated in. The pea requires the greatest breadth of surface; and next to this, the cabbage tribe. The spaces for asparagus, artichokes, strawberries, sea-kale, &c. are in some degree fixed, from the comparative permanency of these crops. Pot and sweet herbs require the least space, and ascending from these to breadths, necessary for the pea and cabbage tribe, the proportions are as various as the kinds to be grown; and these can only be acquired properly by experience, and observation of what takes place in different gardens.

Seeds and plants should be adapted as much as possible to the soil and situation which best suits them; for in the same garden some difference will be found, not only as to sun and shelter, but the earth; as some will be richer, some poorer, some deeper, some shallower, and some perhaps, heavier, some lighter, in due attention to which, advantage is to be reaped. (*Marshall.*)

PART III.

MISCELLANEOUS AGRICULTURAL ITEMS.

The Season.—The extraordinary mildness of the present season, is the common topic of conversation. Our gardens and shrubberies have assumed the appearance of spring. The prevalent range of the thermometer has been from 58 to 68, occasionally it reached 70: Green peas, asparagus, tomatoes, with other spring vegetables, have been in our market the whole of the past month. A friend informs us that he saw growing in a gentleman's garden in the city, many *Tobacco* plants, thrifty and in full bloom, which had sprung up since November, from roots of old plants; also Green Corn, fully fit for the table, grown from last year's seed.

Among the peculiarities of the season, says the Macon Telegraph, of the 31st Dec. may be mentioned the appearance of a load of *water-melons* in our market on Christmas day! They were brought, we understand, from Twiggs county, and sold at a good price. In the garden of Dr. Bird, of this town, *Strawberry vines* have been for some time in blossom.

Large Fruit.—The editor of the Detroit Gazette in speaking of the fertility of that territory says, that during the last month, he has seen several water-melons, each of which weighed upwards of *forty pounds*—and that it is not extraordinary to see a beet which will weigh more than *eighteen pounds*. The following are given as the weight and dimensions of a pear picked in a garden at Detroit. Weight 30 ounces; longitudinal circumference $17\frac{1}{2}$ inches; longitudinal diameter $7\frac{1}{2}$ inches; circumference $14\frac{1}{2}$ inches.

ENGLAND.—We have but little idea in this country of the capital expended on agricultural operations in England. Sir John Sinclair states, that on a light farm in Norfolk, of 1500 acres, the occupier had at one time a compost heap which had cost him £900, equal to \$4000. And a Mr. Walker, in Rocksburghshire, limed in one year $304\frac{1}{2}$ English acres. This operation cost him £2,552 1s. equal to \$11,344 44. What will our planters say to this, especially those who do not make use of even the materials scattered around them, and prefer cutting down and clearing land to manuring their fields.

Carolina Wax Tree, (Myrica Caroliniensis.)—It is proposed by a writer in the Gardener's Magazine, to introduce the broad-leaved Wax Tree of Carolina, into the Southern counties of England, for the purpose of obtaining wax, and the writer supposes that much land, "now not worth 2s. 6d. an acre for their produce above ground, might be made almost to rival on their surface, the wealth which they conceal in their bowels." It is perfectly acclimated in France, and "flourishes even in the dry sands of Prussia." The process for obtaining the wax is given, which is the same as is pursued by those who take the trouble to collect the berries in this state.

Action of Poisons upon the Vegetable Kingdom.—M. T. Marcet, of Geneva, has lately made some curious experiments upon the effects of poisons upon the vegetable system. By causing plants to grow in poisonous mixtures, or by introducing poisons into their system, it was found that the effect on vegetation was nearly the same as upon the functions of animals. The experiments were generally made with plants of the Kidney Bean, and a comparison was always made with a plant watered with spring water.—*Journ. R. Inst.* Oct.

Extraordinary Utility of the Nettle.—In the weekly newspaper of the Bavarian Agricultural Society, 1823, No. 6, the nettle is said to have the following properties: 1. Eaten in salad, it cures consumption; 2. It fattens horned cattle, whether eaten green or dried; 3. Experience has shown that it not only fattens calves, but improves their breed; 4. It is an antidote to most maladies; 5. Sheep which eat it, bring forth healthy, vigorous lambs; 6. It promotes the laying of eggs in hens; 7. It improves the fat of pigs; 8. The seeds, mixed with oats, are excellent food for horses; 9. It grows all the year round, even in the coldest weather; 10. The fibres of the stem make an excellent hemp.

The Bavarian oracle might have added, that few plants force better or more rapidly, and that the tender shoots so produced, make a delicate and high-flavoured pot-herb, resembling the points of the shoots of pompion.

It is certain the nettle is much valued in Holland, where its young shoots are used as a pot-herb; its roots for dying yellow; where the horse-dealers give the seeds to horses, to make them brisk and give them a fine skin; and where considerable portions of fields are planted with it, and mown five or six times a year, as green food.

Pea Husks.—In a German publication it is stated, that these, when green, if boiled in water, with a little sage, or a few hops added, and the whole afterwards fermented, will produce a liquor not inferior to beer.

Borage as Manure.—A writer in a Bavarian Weekly Journal, recommends sowing this plant, and when it is full grown, ploughing it down. The good effects of Borage as a green manure, he has proved by long experience. What renders it preferable to most other plants for this purpose, is the great quantity of soda and other salts which it contains. It may be sown in April and ploughed down in August, in time to be followed by wheat.

Royal Farm.—Near the palace of Frederiksborg, the King has a farm, called Faurholm, which has been laid out on a most extensive scale by Mr. Nielson. "I saw thirty-two pair of horses here, harrowing at one time. The land is cultivated in the English manner, and Elkington's system of draining had produced wonderful effects. All implements of husbandry used, were made under Mr. Nielson's directions, on English principles.—Hedging was likewise carried on to some extent. Mr. Nielson has, however, reasons of a local nature for not extending fencing generally. Hence, the king's farm, in many places, resembles a tract of land in Cambridgeshire, which from its bleak and bald appearance, made me think I was not in England. On this farm, Mr. Nielson has reared a most beautiful breed of cattle, from a Zealand bull and a Jutland cow. When I saw them, they gave me as much pleasure as a remarkable breed of cattle gave Mr. Gilpin. His description may answer to both, being elegantly and neatly formed, rather small, and generally red. Their horns are short, their coats fine, and their heads small. The Danish breed are excellent milkers, and yield fine beef. I was particularly pleased to see some fine ploughs, constructed on English models, which were to be used at a ploughing match on the king's farm, the first, I believe, that had yet taken place in Zealand."—(*Feldborg's Denmark.*)

Germination of Seeds.—The presence of oxygen gas being the principal requisite for germination, and chlorine the most powerful agent for developing this gas, it has been found that healthy seeds steeped in the chloric fluid are accelerated in their germination, and that others that appeared to have lost their faculty of germination, have recovered it by the same process. (*Humboldt.*)

Influence of Salt on Vegetation.—The inhabitants of Carmagne in Languedoc, have such a dread of the corrosive action of salt on wheat in a dry season, that always when they sow that grain, they sow along with it *Salsola sativa*; so that if the former is destroyed by the drought, the latter, which requires a saline soil, prospers, and forms the main crop. In good seasons the wheat prospers, and suffocates the *salsola*. When the latter plant is the main crop, it is burnt for soda.—(*Yvart.*)

New Zealand Hemp (Phormium tenax).—This plant has grown in the open air in the counties of Waterford, Cork, Limerick, Louth, Wicklow, and Dublin, for the last thirty years, as an ornamental plant. During that time it has only suffered once or twice in the extremities of the leaves from the most severe frosts. Six leaves give an ounce of dried fibres, which it is calculated will exceed per acre the produce of either flax or hemp. It may be observed, however, that the separation of these fibres from the matter of the leaf is not at present understood. Whether the cultivation of this plant is ever likely to become an object of importance to Ireland may, we are sorry to say, be almost doubted. At least the experience upon the subject in New South Wales is against it. A company was some years since established in that colony for collecting the plant in New Zealand, and for rearing it at Port Jackson. Both schemes proved unsuccessful; the former from the plant being by no means common enough in New Zealand to pay for the trouble of collecting it: the latter from the long space of time which was required to bring the plants to perfection. Both plans were also impeded by the great difficulty which was experienced in reducing the fibres of the leaves to a marketable state as flax.

Some years ago, W. Duncan, gardener, near Ayr, formed a plan, by which he watched his bees through the day, and his garden at night. This was taken notice of in the *Ayr Advertiser*, at the time it happened, and many people came from a great distance in Scotland and in England to see it. All who saw it acknowledged the method for watching the garden was good, and the plan for watching the bees was considered both sure and very curious. By this method, it was clearly discovered how many bees went out to work, and when swarming, how many were in the swarm. As this may appear to those unacquainted with the method improbable, some explanation is necessary. It is all done by weight. The hive is placed upon a weighing beam, about three feet eight inches long, with a board on the other end, on which stones of the weight of the hive are put. When the bees begin to cast, an ordinary top-swarm is between four pounds and five pounds weight, and when the first pound-weight of bees have left the hive, the beam will turn back a little, the same as a merchant's scale does on the counter. But, before the scale rests, it forces out a trigger, like the pin of mole trap, which lets off a small iron wire to a bell in the house, that gives sufficient warning to the bee mother to go, and take care of the swarm. The above method has been practised for several years by Mr. Duncan.—*Glasgow Courier*.

Bees.—Where the buck-wheat, or, more properly, beech-wheat, *Polygonum fagopyrum*, is extensively cultivated, there bees collect beautiful wax and bad honey; where the sainfoin abounds, there the honey is delicious, but the wax is very difficult to bleach.—(*Ann. de l'Agric. Franc.* t. 81.)

Employment of Bones as Manure.—The Chevalier Masclet has addressed a letter to M. Matthieu de Dombasle on this subject, stating how much he was struck with the advantages of manuring with bones, in a tour he lately made in Scotland. He found them equally effective on sandy and clayey soils, and that their benefit was felt for thirty years. On humid and calcareous soils they are of little use; but on grass lands they are beneficial. (*Annal. de l'Agric. Franc.* Nov. 1825.)

American Aloe.—A superb specimen flowered in September last, (1825) in the garden of E. P. Bastard, Esq. M. P. at Kitley, Devonshire. The flower-stalk was 20 feet high, and displayed upwards of 2000 flowers, arranged on whorls of horizontal branches, so as to resemble an immense candelabra. The plant is 110 years old, and is known to have been in the Kitley gardens upwards of a century.

To destroy the Weevil among Corn.—Lay fleeces of wool which have not been scoured, on the grain, the oily matter attracts the insects among the wool where they soon die, from what cause is not exactly known. M. B. C. Pyrandeau related to the Philomathic Society of Paris, that his father had made the discovery in 1811, and had practised it on a large scale since.—(*Bull. des Sciences Agricoles, Juill.* 1826.)

Chinese Work on Agriculture and Gardening, entitled Tchoung-kia-pao. This work, in four volumes, begins, like that of Hesiod, with the elements of morality, and then proceeds to treat of all that is necessary to be known of the country, agriculture, gardening, laws and medicine. This work formed part of the Chinese writings on agriculture, which were excluded from the general proscription of books in the third century after the Christian era. The Chinese have a fine poem on gardening, published in 1086. The author is one of the first Chinese writers, and the greatest minister that it has produced. His garden, which gives a general idea of the style of Chinese gardening as an art of taste, contains only 20 acres of land. An apartment containing 5000 volumes, is placed by the author at the head of its useful beauties. On the south is seen, in the midst of the waters, cascades, galleries with double terraces, hedges of rose and pomegranate trees;

on the west a solitary portico, evergreen trees, cottages, meadows, sheets of water, surrounded with turf, and a labyrinth of rocks; on the north, cottages placed as if by chance, on little hills, groves of bamboos with gravel walks; on the west a small plain, a wood of cedars, odoriferous plants, medicinal plants, shrubs, citron trees, orange trees, a walk of willows, a grotto, a warren, islands covered with aviaries, bridges of wood and stone, a pond, some old firs, and an extensive view over the river Kiang. Such was the delightful spot where the author of the poem amused himself with hunting, fishing, and botany. At that time, we had no garden in Europe to be compared to it, nor any man who could describe it in good poetry. Madame Dubocage translated a Chinese Idyll into verse, entitled "The Labourer," and which has the same date as this poem on gardening. The imposing ceremony of the commencement of the labours by the emperor himself in the beginning of spring, is still more ancient in China. It was established 150 years before the Christian era. The soldiers in China plough, reap and sow. In the tribunals of the empire there is a president, superintendent, and director-general of agriculture.—(*Olivier de Serres, Historical Introd. to the edit. of 1804.*)

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Burning Steppes in Siberia.—After the thawing of the snow, the dried herbage on the surface is set fire to, in order that it may not injure the growth of the new vegetation, which springs up from self-sown seeds; for there are few perennial plants in that country. The flames extend in all directions, and travel over extensive tracts of country, and the appearance at a distance is like an immense ocean of flame.—(*Anuali Universali, &c. August, 1825.*)

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ERRATA IN No. 1, FOR JANUARY.

- Page 9, line 12—for "*pretends*," read "*pretend*."
 " 15, " 6—for "*decomposed leaves, the detritus*," read "*decomposed lava, detritus*."
 " 16, " 4 from the foot—for "*slate, rock*," read "*slate-rock*."
 " 43, " 7 from the foot—for "*Alexander*," read "*Nicholas*."